

139888

Piney River

August 23, 1967

Wayne, New Jersey

Mr. E. Hladky

Mr. John Dietz  
Mr. J. J. Fitzgerald  
Mr. J. F. Hopkins

Piney River Copperas -  
Acid Recovery

We received your economic analysis on a proposed Lurgi process for the production of sulfuric acid from by-product copperas. However, we have not received a copy of the preliminary information submitted by Lurgi.

We anticipate an annual production of 30,000 to 32,000 tons of  $\text{FeSO}_4$  as copperas (containing 53%  $\text{FeSO}_4$ ). This is based on a production schedule of 45 tons per day, operating 351 days a year and producing a total of 15,795 tons of packed pigment per year.

An additional 12,000 tons of  $\text{FeSO}_4$  will be available as  $\text{FeSO}_4 \cdot \text{H}_2\text{O}$  from our acid recovery operation. This tonnage is based on the total recovery of acid from end liquor with the exception of end liquor used for end liquor quench at digestion and basicity adjustment at the settlers.

Our sales of wet copperas for the first 7 months of 1967 were 9,189 tons, as compared to 11,832 tons for the same period in 1966. Dry copperas sales for the first 7 months of 1967 were 7,314 tons, as compared to 8,902 tons for the same period in 1966. As you know, our copperas sales, both moist (53%  $\text{FeSO}_4$ ) and dry (58%  $\text{FeSO}_4$ ), have always been erratic. Schedules for production and sales are almost impossible to set up.

It has been our opinion for some time that the ideal method to dispose of all waste copperas would be by a process wherein we could produce  $\text{SO}_2$  for the production of sulfuric acid in our existing sulfuric acid plants and the production of iron oxide sinter, which we could sell to the steel industry. In 1947 we operated jointly with Chemical Construction an acid recovery pilot plant and a Dwight-Lloyd Sintering Machine. The ferrous sulfate monohydrate produced as a by-product from the acid recovery was mixed with coal and iron oxide fines and sintered, producing gases suitable for  $\text{H}_2\text{SO}_4$  production and iron oxide sinter which was acceptable to the steel industry.

We have had some preliminary discussions with the Dorr-Oliver Company, Stamford, Connecticut on the possible use of their FluoSolids roaster to process ferrous sulfate monohydrate to produce sulphur dioxide and iron oxide. Dorr-Oliver installed a complete unit in a British  $\text{TiO}_2$  plant. This unit has been operating successfully for the past seven years. It is our plan to continue discussions with Dorr-Oliver to establish capital costs and operating costs based on their proposed plant for Piney River.

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To properly evaluate any process submitted by Lurgi it will be necessary to obtain a plant flow sheet and their proposed operating conditions. If this information is available, capital cost and operating costs can be established.

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Stephen A. Lamanna

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